

WHAT IS CLAIMED IS:

Sub 17
1. A system for selecting at least one arch wire,
comprising:

an input device inputting at least one of:

5 i) at least one sum of a plurality of tooth
sizes, and

ii) a plurality of tooth sizes,

10 a processor, the input device being interfaced to
the processor and the processor receiving from the input
device the at least one of

i) the at least one sum, and

15 ii) the plurality of tooth sizes,

if the processor receives the plurality of tooth sizes
from the input device, the processor determines the at
least one sum as a function of the plurality of tooth
sizes, the processor selecting at least one arch wire as
a function of the at least one sum; and

20 a display device displaying the selected at least
one arch wire.

2. The system according to claim 1, wherein the input device
is a digital caliper.

25 3. The system according to claim 2, wherein the at least one
sum includes a sum of tooth sizes of a maxillary arch and a
sum of tooth sizes of a mandibular arch, the processor

determines at least one of an anatomical correction in the maxillary arch and an anatomical correction in the mandibular arch as a function of the sum of tooth sizes of the maxillary arch and the sum of tooth sizes of the mandibular arch, and the display device displays the at least one of the anatomical correction in the maxillary arch and the anatomical correction in the mandibular arch.

4. The system according to claim 3, wherein the processor determines the anatomical correction in the maxillary arch using the following formula:

$$X = L/R - U,$$

wherein,

X is the anatomical correction in the maxillary arch,

L is the sum of the tooth sizes of the mandibular arch,

R is a ratio, and

U is the sum of the tooth sizes of the maxillary arch.

5. The system according to claim 4, wherein the ratio is one of 0.772 for a six-tooth analysis and 0.913 for a twelve-tooth analysis.

6. The system according to claim 3, wherein the processor determines the anatomical correction in the mandibular arch using the following formula:

$$Y = (U \times R) - L,$$

wherein,

Y is the anatomical correction in the mandibular arch,

U is the sum of the tooth sizes of the maxillary arch,

R is a ratio, and

5 L is the sum of the tooth sizes of the mandibular arch.

7. The system according to claim 6, wherein the ratio is one of 0.772 for a six-tooth analysis and 0.913 for twelve-tooth analysis.

8. The system according to claim 1, wherein at least one sum includes a sum of tooth sizes of a maxillary arch and a sum of tooth sizes of a mandibular arch, and wherein the selected at least one arch wire includes an arch wire for the maxillary arch and an arch wire for the mandibular arch.

9. The system according to claim 8, wherein if the sum of tooth sizes of the maxillary arch is less than or equal to 44.5 mm, the arch wire selected for the maxillary arch has a radius of curvature of approximately 25.4125 mm and the arch wire selected for the mandibular arch has a radius of curvature of approximately 23.0375 mm.

10. The system according to claim 8, wherein if the sum of tooth sizes of the maxillary arch is between 44.5 mm and 49.4 mm, the arch wire selected for the maxillary arch has a radius

of curvature of approximately 26.75 mm and the arch wire selected for the mandibular arch has a radius of curvature of approximately 24.25 mm.

5 11. The system according to claim 8, wherein if the sum of tooth sizes of the maxillary arch is at least 48.4 mm, the arch wire selected for the maxillary arch has a radius of curvature of approximately 28.0875 mm and the arch wire selected for the mandibular arch has a radius of curvature of 25.4625 mm.

12. The system according to claim 1, wherein the input device is a keyboard.

15 13. A system for determining an anatomical correction for at least one of a maxillary arch and a mandibular arch, comprising:

a caliper for measuring at least one tooth size;

20 a processor, the caliper being interfaced to the processor, the processor receiving from the caliper the at least one tooth size, the processor determining at least one sum of a plurality of tooth sizes as a function of the least one tooth size, the processor determining the anatomical correction for the at least one of the
25 maxillary arch and the mandibular arch as a function of the least one sum; and

a display device displaying the determined anatomical correction.

14. The system according to claim 13, wherein the at least one sum includes a sum of tooth sizes of the maxillary arch and a sum of tooth sizes of the mandibular arch, the processor determining the anatomical correction for the at least one of the maxillary arch and the mandibular arch as a function of the sum of tooth sizes of the maxillary arch and the sum of tooth sizes of the mandibular arch.

15. The system according to claim 13, wherein the processor determines the anatomical correction in the maxillary arch using the following formula:

$$X = L/R - U \text{ wherein,}$$

X is the anatomical correction in the maxillary arch,

L is the sum of the tooth sizes of the mandibular arch,

R in the ratio, and

U in the sum of the tooth sizes of the maxillary arch.

16. The system according to claim 15, wherein the ratio is one of 0.772 for a six-tooth analysis and 0.913 for a twelve-tooth analysis.

17. The system according to claim 13, wherein the processor determines the anatomical correction in the mandibular arch

using the following formula:

$$Y = (U \times R) - L,$$

wherein,

Y is the anatomical correction in the mandibular arch,

5 U is the sum of the tooth sizes of the maxillary arch,

R is a ratio, and

L is the sum of the tooth sizes of the mandibular arch.

10 18. The system according to claim 17, wherein the ratio is one of 0.772 for a six-tooth analysis and 0.913 for a twelve-tooth analysis.

15 19. A computerized method for selecting at least one arch wire, comprising the steps of:

receiving from an input device by a processor at least one of:

i) at least one sum of a plurality of tooth sizes, and

ii) a plurality of tooth sizes;

20 if the plurality of tooth sizes are received, determining by the processor the at least one sum; and selecting by the processor the at least one arch wire as a function of the at least one sum.

25 20. The computerized method according to claim 19 further comprising the step of:

displaying the selected at least one arch wire.

21. The computerized system according to claim 19, wherein the input device is a digital caliper.

5

22. The computerized method according to claim 19, wherein the at least one sum includes a sum of tooth sizes of a maxillary arch and sum of tooth sizes of a mandibular arch, further comprising the steps of:

10 determining by the processor at least one of an anatomical correction in the maxillary arch and an anatomical correction in the mandibular arch as a function of the sum of tooth sizes of the maxillary arch and the sum of tooth sizes of the mandibular arch; and

15 displaying the at least one of the anatomical correction in the maxillary arch and the anatomical correction in the mandibular arch.

20 23. The computerized method according to claim 22, wherein the step of determining the at least one of the anatomical correction in the maxillary arch and the anatomical correction in the mandibular arch includes a step of determining the anatomical correction in the maxillary arch using the following formula:

25
$$X = L/R - U,$$

wherein,

X is the anatomical correction in the maxillary arch,
L is the sum of the tooth sizes of the mandibular arch,
R is a ratio, and
U is the sum of the tooth sizes of the maxillary arch.

5

24. The computerized method according to claim 23, wherein
the ratio is one of 0.772 for a six-tooth analysis and 0.913
for a twelve-tooth analysis.

10 25. The computerized method according to claim 22, wherein
the step of determining the at least one of the anatomical
correction in the maxillary arch and the anatomical correction
in the mandibular arch includes a step of determining the
anatomical correction in the mandibular arch using the
15 following formula:

$$Y = (U \times R) - L,$$

wherein,

20

Y is the anatomical correction in the mandibular arch,
U is the sum of the tooth sizes of the maxillary arch,
R is a ratio, and
L is the sum of the tooth sizes of the mandibular arch.

25

26. The computerized method according to claim 25, wherein
the ratio is one of 0.772 for a six-tooth analysis and 0.913
for a twelve-tooth analysis.

27. The computerized method according to claim 19, wherein the at least one sum includes a sum of tooth sizes in a maxillary arch and a sum of tooth sizes in a mandibular arch, wherein the selecting step includes a step of:

5 if the sum of the tooth sizes in the maxillary arch is less than or equal to 44.5 mm, selecting an arch wire for the maxillary arch having a radius of curvature of approximately 25.4125 mm and selecting an arch wire for the mandibular arch having a radius of curvature of
10 approximately 23.0375 mm.

28. The computerized method according to claim 19, wherein the at least one sum includes a sum of tooth sizes in a maxillary arch and a sum of tooth sizes in a mandibular
15 arch, wherein the selecting step includes a step of:

 if the sum of tooth sizes of the maxillary arch is between 44.5 mm and 49.4 mm, selecting an arch wire for the maxillary arch having a radius of curvature of approximately 26.75 mm and selecting an arch wire for the
20 mandibular arch having a radius of curvature of approximately 24.25 mm.

29. The computerized method according to claim 19, wherein the at least one sum includes a sum of tooth sizes in a
25 maxillary arch and a sum of tooth sizes in a mandibular arch, wherein the selecting step includes a step of:

if the sum of tooth sizes of the maxillary arch is at least 48.4 mm, selecting an arch wire for the maxillary arch having a radius of curvature of approximately 28.0875 mm and selecting an arch wire for the mandibular arch having a radius of curvature of 25.4625 mm.

30. The system according to claim 19, wherein the input device is a keyboard.

31. A computerized method for determining an anatomical correction for at least one of a maxillary arch and a mandibular arch, comprising the steps of:

measuring with a caliper a plurality of tooth sizes; receiving by the processor from the caliper the at least one of tooth size;

determining by the processor the at least one sum as a function of the plurality of tooth sizes; and

determining the anatomical correction for the at least one of the maxillary arch and the mandibular arch as a function of the at least one mesiodistal width; and displaying the determined anatomical correction.

32. The computerized method according to claim 31, wherein the at least one sum includes a sum of tooth sizes of a maxillary arch and sum of tooth sizes of a mandibular arch.

33. The computerized method according to claim 32, wherein the determining step includes a step of:

determining the anatomical correction in the maxillary arch using the following formula:

$$X = L/R - U,$$

wherein,

X is the anatomical correction in the maxillary arch,

L is the sum of the tooth sizes of the mandibular arch,

R is a ratio, and

U is the sum of the tooth sizes of the maxillary arch.

34. The computerized method according to claim 33, wherein the ratio is one of 0.772 for a six-tooth analysis and 0.913 for a twelve-tooth analysis.

35. The computerized method according to claim 32, wherein the determining step includes a step of determining the anatomical correction in the mandibular arch using the following formula:

$$Y = (U \times R) - L,$$

wherein,

Y is the anatomical correction in the mandibular arch,

U is the sum of the tooth sizes of the maxillary arch,

R is a ratio, and

L is the sum of the tooth sizes of the mandibular arch.

36. The computerized method according to claim 35, wherein the ratio is one of 0.772 for a six-tooth analysis and 0.913 for a twelve-tooth analysis.

5 37. An arch wire, comprising:

a metal wire sized to fit a maxillary arch, the metal wire having a radius of curvature of one of 25.4125 mm, 26.75 mm and 28.0875 mm.

10 38. The arch wire according to claim 37, wherein the metal wire includes super-elastic preformed arch wires.

15 39. The arch wire according to claim 37, wherein the metal wire has one of a round, a square, and a rectangular cross-section.

40. An arch wire, comprising:

20 a metal wire sized to fit a mandibular arch, the metal wire having a radius of curvature of one of 25.4625mm, 24.25 mm and 25.4625 mm.

41. The arch wire according to claim 40, wherein the metal wire includes super-elastic preformed arch wires.

25 42. The arch wire according to claim 40, wherein the metal wire has one of a round, a square, and a rectangular cross-